

Remarks

The applicants have carefully reviewed the Office action dated July 3, 2007. In light of the forgoing amendments and the following remarks, reconsideration is respectfully requested.

Rejections Under 35 USC § 101

The Office action contends that the apparatus of claim 17 “would reasonably be interpreted by one of ordinary skill in the art as computer listings per se.” (Office action, 2:12-16). The applicants do not dispute that the instruction analysis module, the cost estimation module, and the partition generator may be implemented as software. In fact, the applicants’ specification states “The example system 100 ... may be implemented in software where one or more software and/or firmware programs are used to perform the different functions...” (§ [0112]).

However, the Office action contends, that the components of the apparatus recited in claim 17 “are not physical ‘things.’” (Office action, 2-15-16). This is incorrect. Claim 17 recites an apparatus comprising an instruction analysis module, a cost estimation module, and a partition generator. While the applicants’ specification describes an implementation of the components recited in claim 17 as software, the specification also describes implementing the components of claim 17 as hardware. “The example system 100 may be implemented as several components of hardware, each of which is configured to perform one or more functions...” (§ [0112]) (emphasis added). In addition, FIG. 5 of the applicants’ specification illustrates a processor system that may be used to execute software instructions that implement the flowchart of FIG. 2. A person of ordinary skill in the art provided with the detailed description of the applicants’ specification would have no difficulty translating any or all of the computer into, for example, physical hardware circuitry that implement the components recited in claim 17. For example, it is well known in the art to implement software instructions as digital logic gates.

Therefore, while the components recited in claim 17 may be implemented as software, the apparatus recited in claim 17 is directed to a physical “thing” and such an implementation is supported by the applicants’ specification. Therefore, claim 17 is directed to statutory subject matter. For similar reasons, claims 18, 19-20, and 21-24 are also directed to statutory

subject matter. Accordingly, the applicants respectfully request that the rejections under 35 USC § 101 be withdrawn.

Rejections Under 35 USC § 112

Claims 5, 9, and 19 have been amended to address any rejections under 35 USC § 112 that may have been proper. Accordingly, the applicants respectfully request that the rejections under 35 USC § 112 be withdrawn.

Rejections Under 35 USC § 102

Claim 1 has been amended to include all of the recitations of claim 11. Claim 1 recites a method comprising, *inter alia*, estimating a cost of merging a first set of instructions and a second set of instructions using a dataflow analysis wherein the cost of merging the first and second sets of instructions is associated with instructions that belong to only the first set of instructions and instructions that belong to only the second set of instructions. In other words, the cost is associated with the mutually exclusive set of instructions.

Claim 1 (and previous claim 11) was rejected as anticipated by Tang (*Thread Partitioning and Scheduling...*). The Office action cites several portions of Tang as describing that the cost is associated with instructions that belong to only the first set of instruction and instructions that belong to only the second set of instructions. However, none of the cited portions describes such a recitation. Rather, the cited portions merely describe that two nodes can be merged to reduce the number of threads and eliminate thread switching costs. (Office action, 11:1-11). Tang's description of thread switching costs does not suggest that the cost is associated with the mutually exclusive instructions of each instruction set but, rather, suggests that the cost is based on the cost associated with thread switching. There is no apparent suggestion in Tang, and no suggestion is provided in the Office action, that the cost of thread switching is associated with the instructions that belong to only the first set of instructions and instructions that belong to only the second set of instructions. It is well settled that "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051 (Fed. Cir. 1987). As described in the forgoing, the cited reference, Tang, fails to describe or suggest all of the elements of claim 1.

Therefore, for at least the forgoing reason, claim 1 and all claims depending therefrom are in condition for allowance.

Claims 17 and 25 have been amended to include the recitations of claim 11. Claims 17 and 25 were rejected as anticipated by Tang. As described in the forgoing, Tang fails to describe or suggest that the cost of merging the first and second sets of instructions is associated with instructions that belong to only the first set of instructions and instructions that belong to only the second set of instructions. Therefore, for at least the forgoing reasons, claims 17 and 25 and all claims depending therefrom are in condition for allowance.

If there is any matter that the examiner would like to discuss, the examiner is invited to contact the undersigned representative at the telephone number set forth below.

Respectfully submitted,
HANLEY, FLIGHT & ZIMMERMAN, LLC
150 South Wacker Drive
Suite 2100
Chicago, Illinois 60606

Dated: October 4, 2007

/Michael W. Zimmerman/
Michael W. Zimmerman
Reg. No. 57,993
Agent for Applicants
312.580.1020